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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,202	03/08/2004	Richard Blackmore	V-043	6233

26328 7590 11/21/2005

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EXAMINER

FISCHER, JUSTIN R

ART UNIT PAPER NUMBER

1733

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/798,202

Applicant(s)

BLACKMORE ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 21-29 and 34-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 16-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I (claims 1-20 and 30-33) in the reply filed on October 9, 2005 is acknowledged.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7, 12, 14, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 7, the claim recites the limitation "the material" in line 1. There is insufficient antecedent basis for this limitation in the claim. In this instance, "the material", which appears to be referring to "the thermally responsive material", is not defined in the claims from which claim 7 depends from (claims 1 and 6).

As to claim 12, the claim recites the limitation "the heat" in line 1. There is insufficient antecedent basis for this limitation in the claim. In this instance, "the heat", which appears to be referring to the heat supplied after release of tension, is not defined in the claims from which claim 12 depends from (claims 1 and 9).

Regarding claim 14, the claim recites the limitation "the partially cured chemical reactant" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested that the language be changed to read "the partially cured thermally responsive material".

With respect to claim 15, the claim recites the limitation "the reactant". There is insufficient antecedent basis for this limitation in the claim. It is suggested that the language be changed to read "the thermally responsive material".

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 9-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Nimke (GB 2,181,507). Nimke discloses a method of lining a pipeline comprising forming a coiled resilient member (support), inserting said coiled resilient member into an interior annulus of a pipe, releasing a tension applied to the support (via adhesive in overlapping areas), and expanding said member to contact the inner surface of the pipe, wherein said member has a resting diameter that is greater than the diameter of the pipe (Page 1, Lines 100-125 and Page 3, Lines 88+).

Regarding claim 2, a heat sensitive adhesive bonding material is included with the support (Page 3, Lines 121+).

With respect to claims 9 and 10, said coiled resilient member is described as being formed from a wide variety of materials, including resilient metals (Page 2, Lines 40-60).

As to claim 11, Nimke teaches a heating step (heating occurs through the entire release of tension) (Page 1, Lines 110-120 and Page 3, Lines 100-110).

Regarding claim 13, Nimke describes the application of a heat sensitive bonding material to the outside of the coiled member in order to provide a bond between the coiled member and the inner wall of the pipe- the expansion noted above would necessarily result in this material, identified by the claim as a "thermally responsive material", to be pressed into the inner wall.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 9-15, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strand (US 4,768,562) in view of Nimke, McGuire (EP 0542731), and Weickmann (DE 2132310). Strand teaches a pipe relining method comprising forming a coilable and expandable support or pipe liner, coiling said support, inserting said support into an interior annulus of a pipe, releasing a tension applied to said support (due to initial heating), and expanding said support against the wall of the pipe (Column 2, Lines 25-40 and Lines 54+). In regards to the diameter of the support in a relaxed state, Strand teaches that the outer diameter of the support is "substantially equal" to the inner diameter of the pipe (Column 2, Lines 25-32). This language would have been recognized as including embodiments in which the support has a diameter that is slightly less than and greater than the pipe diameter, wherein each of these embodiments are well recognized in the pipe lining industry. Nimke, McGuire, and

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Weickmann have been applied to evidence the well known use of similar, coilable pipe liners having relaxed diameters greater than the associated pipe diameter. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the support with a larger diameter than the pipe.

Furthermore, in regards to inserting the support into the pipe in a coiled state, Strand does teach that the support is coiled for storage and transportation (Column 1, Lines 45-51). While it is unclear if the support or liner is installed in this coiled state, it is well known to position liners within pipes in such a manner, as shown for example by Nimke. McGuire and Weickmann additionally evidence the recognized technique in which the liner is inserted into the pipe in a deformed state. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to position the support or liner of Strand within the pipe in a coiled state as it is consistent with the common technique in the pipe lining industry. It is emphasized that the liner of Strand is formed into a coiled state but it is unclear if the liner is positioned within the pipe in this state- in view of the above noted references, though, the formation of a coiled liner would have been well within the purview of one of ordinary skill in the art at the time of the invention. It is noted that such a coiling technique is seen to constitute a "tension winding" step as required by claims 30-33.

Regarding claims 2-5 and 32, the liner of Strand includes a fiber lattice that is impregnated with a thermoset or thermoplastic resin, wherein said resin is partially cured or B-staged (Column 2, Lines 25-66).

As to claims 6, 7, 9, 12, and 30-32, Strand teaches a method in which electrically conductive fibers (e.g. conductive fibers) are included in the liner or support and electrical current, from a power source, is directed through said fibers (Column 2, Lines 35-45 and Column 3, Lines 1-10). The reference expressly states that the heat is formed by electrical resistance heating (Column 3, Lines 1-5).

With respect to claim 10, Strand teaches that the electrically conductive fibers can be metallic fibers (Column 2, Lines 40-45).

As to claim 11, the method of Strand includes a heating step after the tension is released (Column 3, Lines 5-15).

Regarding claims 13 and 14, the expansion described by Strand would necessarily force or press the resin, defined by the claim as a "thermally responsive material", into the wall of the pipe as it impregnates the outermost layer of the support.

With respect to claim 15, the method of Strand includes a final heating step that fully polymerizes or cures the resin (Column 3, Lines 5-15).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strand, Nimke, McGuire, and Weickmann as applied in claim 7 above and further in view of Endo (US 5,010,440). As noted above, Strand describes a method in which electrically conductive fibers, such as metallic fibers, are included in a pipe liner or support. While the reference fails to expressly describe the inclusion of carbon fibers, such fibers are extensively used in similar pipe liners as they are recognized as being an alternative, electrically conductive material, as shown for example by Endo (Column 4, Lines 20-35). It is emphasized that the description of metallic fibers is only exemplary in Strand

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and one of ordinary skill in the art at the time of the invention would have found it obvious to use alternative materials that demonstrate electrical conductivity and are commonly used in the pipe lining industry.

9. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strand, Nimke, McGuire, and Weickmann as applied in claim 30 above and further in view of Kamiyama (JP 2000177010). As noted above, Strand discloses a pipe liner or support including a thermoplastic or thermoset resin (Column 2, Lines 30-40). While the reference fails to suggest specific types of resins, there are several resin that are commonly used in the pipe lining industry, including esters, as shown for example by Kamiyama (Abstract). One of ordinary skill in the art at the time of the invention would have found it obvious to use an ester resin in the method of Strand since it is recognized as a common impregnating resin in the pipe lining industry and Strand generally teaches the use of any suitable thermoplastic or thermoset resin.

***Allowable Subject Matter***

10. Claims 16-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. While it is well recognized to repair a pipeline by injecting a foamable material around the outer wall of a pipeline, as shown for example by Watanabe (JP 03033593), such a method is not described, suggested, or taught in combination with the relining method of the claimed invention. In particular, it appears that the "foam" method disclosed in Watanabe and described by applicant in the original disclosure would be viewed as an alternative repair means to a relining



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method. One of ordinary skill in the art at the time of the invention would not have found it obvious to perform the claimed relining method in combination with a "foam" method. Lastly, applicant notes that the combination of a relining method and a chemical injection or "foam" method eliminates the introduction of foam into the annuls of the pipe (occurs when "foam" method, of Watanabe for example, is practiced alone).

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin R. Fischer whose telephone number is (571) 272-1215. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin Fischer  
November 15, 2005